Cisco ME 4600 Series Agora-NG Network Management Solution

The Cisco[®] ME 4600 Series Agora-NG[®] Network Management Solution (NMS) is the centralized multitechnology NMS for the Cisco ME 4600 Multiservice Optical Access Platform. It implements fault, configuration, administration, performance, and security (FCAPS) functions for multitechnology equipment. The Cisco ME 4600 Series Agora-NG allows network service providers to manage Gigabit passive optical network (GPON) and active Ethernet networks to help reduce capital investments at network operational centers (NOC).

The Cisco ME 4600 Series Agora-NG network provisioning platform can be delivered in a group of differentiated delivery packs designed to meet client needs. The configurations can meet single-technology, single-user, and low-processing requirements, as well as high-availability, georedundancy, and multitechnology management needs. The platform can significantly reduce operational costs and increase efficiency by delivering real-time, end-to-end service provisioning along network infrastructure, allowing fast detection of network faults and quality of service (QoS) degradation.

Primary Features and Business Benefits

- Significant improvements in operational efficiency, due to real-time fault and QoS degradation monitoring
- Multitechnology and multiservice provisioning
- Intuitive graphical user interface for easy operation (Figure 1)
- Scalable, flexible, and cost-efficient platform infrastructure
- Easy integration with third-party, high-level OSS
- Significant reduction in operating expenses (OpEx)

Figure 1.   Cisco ME 4600 Series Agora-NG Graphical User Interface

Figure 2.   Cisco ME 4600 Series Agora-NG NMS Reference Architecture
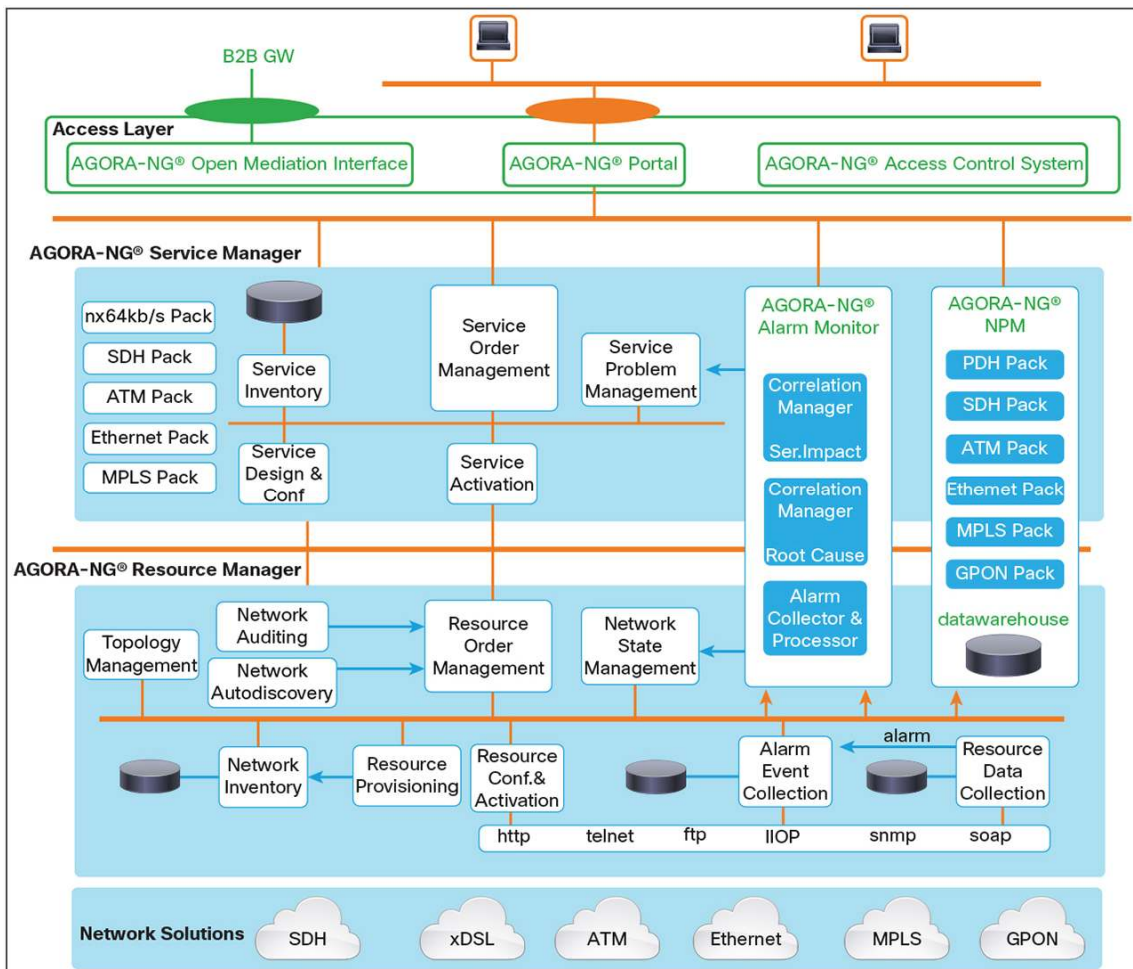
The Cisco ME 4600 Series Agora-NG architecture (Figure 2) follows the most recent Next-Generation Operating Support System (NGOSS) TM Forum guidelines for implementing next-generation OSS systems. It includes software components interconnected by communication buses and APIs, and it uses a common information model based on Shared Information Data (SID) and Multi-Technology Network Management (MTNM) specifications. The architecture covers the resource-management and service-management layer functions of an eTOM operations model. It allows the implementation of provisioning and assurance processes. Cisco ME 4600 Series Agora-NG is built on an open multi-tier distributed architecture, based on Java 2 Platform Enterprise Edition (J2EE) and web services middleware, and it uses Java and web-based GUI technologies. This architecture helps ensure multi-user operation, scalability, redundancy, and security.

Cisco ME 4600 Series Agora-NG Resource Manager

Cisco ME 4600 Series Agora-NG is the basic component of the NMS suite, providing physical and logical resource-management tools. It provides a network inventory process, which supports provisioning and assurance operations at a resource-management layer. The platform stores the network topology and the information of all managed network resources. New network elements are automatically discovered and inserted into network inventory by a network autodiscovery process, which polls the network periodically.

The topology-management module provides graphical tools for operators to build the network topology (Figure 3). A hierarchical topology map is included, offering a real-time graphical representation of the network Inventory, with a color code to represent the network status. It also shows resource availability for each link, acting as a powerful tool for network traffic planning. Cisco ME 4600 Series Agora-NG Resource Manager includes a fault management module, the Alarm Monitor. It promotes the detection of network and service faults in real time and presents them as alarms in an intuitive web-based interface. It correlates alarms, providing root cause analysis and information on how services are affected. It also provides alarm notification by SMS and email.

Figure 3.   Cisco ME 4600 Series Agora-NG NMS Resource Manager Network Topology

A powerful access control module manages user-access profiles and controls admission to hierarchical domains and functions on a per-user basis, allowing single sign-on in all Cisco ME 4600 Series Agora-NG modules. Several high-availability options are available, adapted to high-demand scenarios. Local and geographical redundancies are available, together with clustering and active-standby solutions.

Cisco ME 4600 Series Agora-NG Service Manager

Cisco ME 4600 Series Agora-NG Service Manager is an add-on component of the application that allows end-to-end service management. It facilitates service provisioning by automatically assigning resources to service orders and performing service activation. It also provides information on service faults, based on service alarms and QoS reports. It provides a service inventory repository where the service catalog and service instances are stored, and it keeps service instance configuration and states. The service-provisioning module reserves and frees network resources in the network inventory. It includes a business-process engine that controls the execution of tasks required for delivering services.

Typical service order requests include service provisioning, service activation, service deactivation, service modify, and service cancelation. The module includes a powerful routing, technologically agnostic algorithm, and its parameters can include rules to define routing constraints. Service activation receives requests for resource activation and de-activation, performs service decomposition on resources, and sends resource orders to the Cisco ME 4600 Series Agora-NG Resource Manager. Based on information received from the Cisco ME 4600 Series Agora-NG Alarm Monitor, the service problem management module updates the service status in real time.

Figure 4.   Cisco ME 4600 Series Agora-NG NMS Service Manager
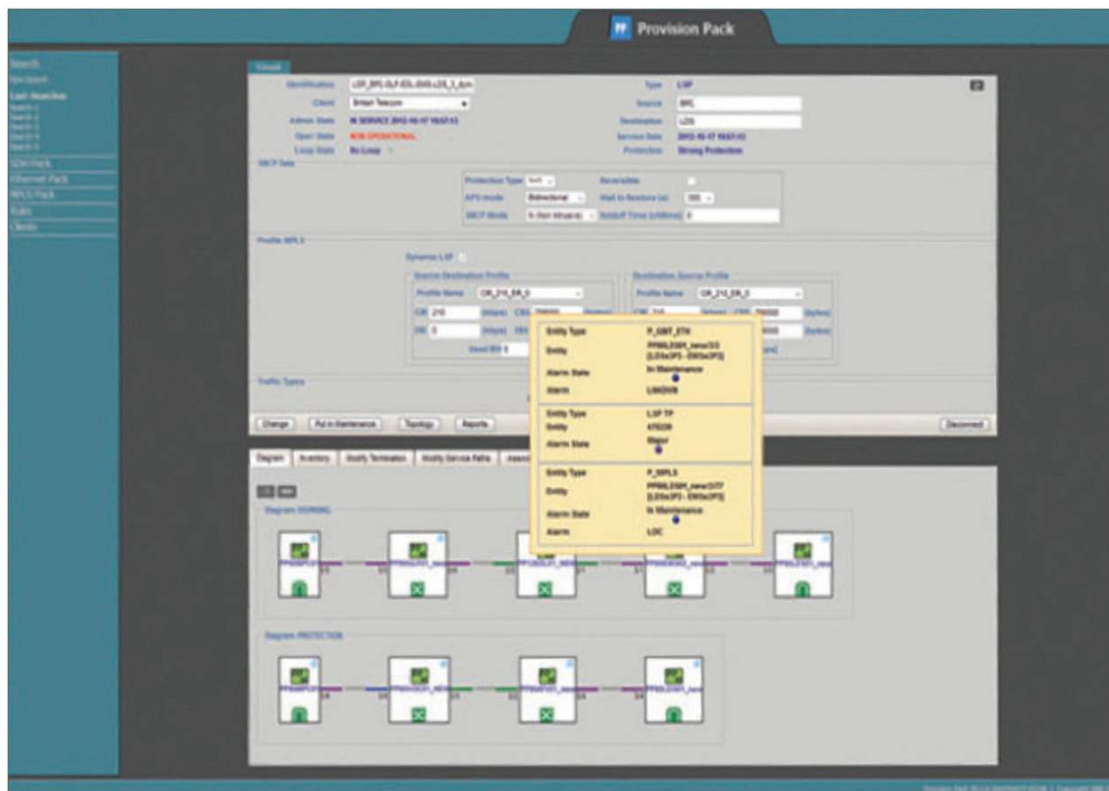
Cisco ME 4600 Series Agora-NG Management Components

Table 1 lists the management component parts available for the Cisco ME 4600 Series Agora-NG.

Table 1.   Cisco ME 4600 Series Agora-NG Management Components

Part Number	Description
ME4600 Agora NG Express Edition	
R-ME4600-ANG-EXP-R	ME4600 Agora NG Express Edition - Resource Manager • Up to 5 simultaneous users • "Oracle Standard Edition One" license (not included) • Supports up to 50 Maximum NE License Pack Units (not included) • Includes Alarm Monitor
R-ME4600-ANG-EXP-S	ME4600 Agora NG Express Edition - Service Manager • xPON Pack - xPON Service Provisioning & Diagnostic
R-ME4600-ANG-EXP-F	ME4600 Agora NG Express Edition - Fault Management Northbound Interface
R-ME4600-ANG-EXP-I	ME4600 Agora NG Express Edition - Inventory Management Northbound Interface
R-ME4600-ANG-EXP-P	ME4600 Agora NG Express Edition - Performance Management Northbound Interface
ME4600 Agora NG Standard Edition	
R-ME4600-ANG-STD-R	ME4600 Agora NG Standard Edition - Resource Manager • Up to 5 simultaneous users • "Oracle Standard Edition" license (not included) • Supports up to 200 Maximum NE License Pack Units (not included) • Includes Alarm Monitor
R-ME4600-ANG-STD-S	ME 4600 Agora NG Standard Edition - Service Manager • xPON Pack - xPON Service Provisioning & Diagnostic
R-ME4600-ANG-STD-F	ME4600 Agora NG Standard Edition - Fault Management Northbound Interface
R-ME4600-ANG-STD-I	ME4600 Agora NG Standard Edition - Inventory Management Northbound Interface
R-ME4600-ANG-STD-P	ME4600 Agora NG Standard Edition - Performance Management Northbound Interface
ME4600 Agora NG Enterprise Edition	
R-ME4600-ANG-ENT-R	ME4600 Agora NG Enterprise Edition - Resource Manager • Up to 25 simultaneous users • "Oracle Enterprise Edition + Partitioning" license (not included) • Supports unlimited NE License Pack Units (not included) • Includes Alarm Monitor
R-ME4600-ANG-ENT-S	ME4600 Agora NG Enterprise Edition - Service Manager • xPON Pack - xPON Service Provisioning & Diagnostic
R-ME4600-ANG-ENT-F	ME4600 Agora NG Enterprise Edition - Fault Management Northbound Interface
R-ME4600-ANG-ENT-I	ME4600 Agora NG Enterprise Edition - Inventory Management Northbound Interface
R-ME4600-ANG-ENT-P	ME4600 Agora NG Enterprise Edition - Performance Management Northbound Interface
ME4600 Agora NG Premium Edition	
R-ME4600-ANG-PRM-R	ME4600 Agora NG Premium Edition - Resource Manager • More than 25 simultaneous users • "Oracle Enterprise Edition + Partitioning" license (not included) • Supports unlimited NE License Pack Units (not included) • Includes Alarm Monitor
R-ME4600-ANG-PRM-S	ME4600 Agora NG Premium Edition - Service Manager • xPON Pack - xPON Service Provisioning & Diagnostic
R-ME4600-ANG-PRM-F	ME4600 Agora NG Premium Edition - Fault Management Northbound Interface
R-ME4600-ANG-PRM-I	ME4600 Agora NG Premium Edition - Inventory Management Northbound Interface
R-ME4600-ANG-PRM-P	ME4600 Agora NG Premium Edition - Performance Management Northbound Interface

Part Number	Description
ME4600 Agora NG NE License Packs	
L-ME4620-ANG-NE	ME4600 Agora NG - ME4620 OLT - Network Element License (per chassis)
L-ME4611-ANG-NE	ME4600 Agora NG - ME4611 OLT - Network Element License (per chassis)
L-ME4605-ANG-NE	ME4600 Agora NG - ME4605 OLT - Network Element License (per chassis)
L-ME4601-ANG-NE	ME4600 Agora NG - ME4601 OLT - Network Element License (per chassis)

Cisco ME 4600 Series Agora-NG Value-Added Services

Cisco ME 4600 Series Agora-NG Network Performance Manager is an application that extends the basic performance management capabilities of Cisco ME 4600 Series Agora-NG Resource Manager. It builds a data warehouse with performance data collected from the network and provides powerful and flexible reports (graphical and tabular) of infrastructure key performance indicators.

Cisco ME 4600 Series Agora-NG Northbound Interfaces make integration with other systems possible and easy. They provide inventory, fault, QoS, and other specialized APIs, like massive provisioning and diagnosis.

Cisco ME 4600 Series Agora-NG Firmware Manager extends Resource Manager, providing the ability to centrally manage the NE firmware versions of the network. It also makes it possible to schedule transfer operations to reduce the effects on the network.

Cisco ME 4600 Series Agora-NG Versions

Table 2 provides a list of the available versions of the Cisco ME 4600 Series Agora-NG.

Table 2.   Cisco ME 4600 Series Agora-NG Versions

	Resource Manager	Number of Users	High Availability	Service Manager	Northbound Interfaces
Express	1	<=5		2	3
Standard	✔	<=5		2	3
Enterprise	✔	<=25	2	2	3
Premium	✔	>=25	2	2	3

1 - Single technology
2 - Add-on optional package
3 - Add-on optional package, with additional development and integration support required

Service and Support

Cisco offers a wide range of services programs to help accelerate customer success. These innovative services programs are delivered through a unique combination of people, processes, tools, and partners, promoting high levels of customer satisfaction. Cisco services help you protect your network investment, optimize network operations, reduce total cost of ownership, and prepare your network for new applications to extend network intelligence and the power of your business. For more information about Cisco services, refer to Cisco Technical Support Services or Cisco Advanced Services.

Cisco offers a portfolio of technical support services to help ensure that Cisco products operate efficiently, remain highly available, and benefit from the most up-to-date system software. The services and support programs described in Table 3 are available as part of the Cisco Carrier Ethernet Switching Service and Support solution and are available directly from Cisco and through resellers.

Table 3.   Service and Support

Advanced Services	Features	Benefits
Cisco Total Implementation Solutions (TIS), available directly from Cisco **Cisco Packaged TIS, available through resellers**	• Project management • Design documentation creation • Site survey and product staging • Node and network configuration and deployment • Installation, test, and cutover • Training • Major moves, adds, and changes	• Supplement existing staff • Implementation by trained Cisco resources, Cisco partner resources, or both • Faster time to market • Help ensure functions meet needs • Mitigate risk
Cisco Network Optimization Service (NOS)	Lifecycle support for ongoing network planning and growth • Remote change support • Design support • Software strategy • Network health checks • Continuous learning	• Provide ongoing support for your network operations from Cisco consulting engineers • Supplement existing staff
Cisco Service Provider Base Support and Service Provider-Based Onsite Support, available directly from Cisco **Cisco Packaged Service Provider - Based Support, available through resellers**	• 24-hour access to software updates • Web access to technical repositories • Telephone support through the Cisco Technical Assistance Center (TAC) • Advance replacement of hardware parts	• Facilitate proactive or expedited problem resolution • Lower total cost of ownership by taking advantage of Cisco expertise and knowledge • Minimize network downtime

For More Information

http://www.cisco.com/en/US/products/hw/switches/index.html

CISCO

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.